

REMARKS

I. Status of Claims

Claims 1-7 and 15-16 are pending in the application, with claims 1, 5 and 15 being independent. Claims 1, 5, and 15-16 are currently amended. Support for these amendments may be found in the published application in at least FIGS. 2, 8, and 10 and in paragraphs [0046] – [0050]. Claims 8-14 and 17-18 were previously canceled and claim 4 is currently canceled without prejudice to and/or disclaimer of the subject matter therein.

Claims 1 – 3, 5 – 7, 15, and 16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,356,817 (“Abe”) in view of U.S. Patent No. 6,590,299 (“Kuang”) and U.S. Patent No. 6,664,751 (“Gabriel”).

Claim 4 stands rejected under § 103 as allegedly being unpatentable over Abe in view of Kuang and Gabriel and further in view of Japanese Patent No. 2000-087785 (“Tadao”).

The Applicant respectfully requests reconsideration of these rejections in view of the foregoing amendments and the following remarks.

II. Remarks Regarding the Rejection of Claims 1, 5, and 15 Under § 103

Claims 1 – 3, 5 – 7, 15, and 16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Abe in view of Kuang and Gabriel.

It is respectfully submitted that claim 1, as amended, is patentable over the cited references at least because it recites, in part, “wherein, when executing the restriction control during a predetermined light load state, *said control module changes a charge-discharge electric power of said accumulator while maintaining a constant engine torque*, and wherein, when executing the restriction control during a predetermined heavy load state, *said control module changes the charge-discharge electric power of said accumulator while maintaining a constant power demand of said engine*.”

It is respectfully submitted that claim 5, as amended, is patentable over the cited references at least because it recites, in part, “wherein, when executing the restriction control during a predetermined light load state, *said control module changes a charge-discharge electric power of said accumulator while maintaining a constant engine torque*, and wherein,

when executing the restriction control during a predetermined heavy load state, ***said control module changes the charge-discharge electric power of said accumulator while maintaining a constant power demand of said engine.***”

It is respectfully submitted that claim 15 is patentable over the cited references at least because it recites, in part, “wherein, when executing the restriction control during a predetermined light load state, ***a charge-discharge electric power of said accumulator . . . is changed while maintaining a constant engine torque***, and wherein, when executing the restriction control during a predetermined heavy load state, ***the charge-discharge electric power is changed while maintaining a constant power demand of said engine.***”

The Applicant respectfully submits that none of Abe, Kuang, and Gabriel, nor the three in combination, teach a power output apparatus wherein engine torque is held constant during restriction control in a light load state but wherein a power demand of an engine is held constant during restriction control in a heavy load state, as recited by claims 1, 5, and 15.

Nevertheless, the Office action asserts that the combination of Abe, Kuang, and Gabriel renders claims 1, 5, and 15 of the present application obvious. As discussed in *KSR Int’l Co. v. Teleflex Inc.*, it remains necessary to identify the reason why a person of ordinary skill in the art would have been prompted to combine alleged prior art elements in the manner as claimed. 550 U.S. 398, 418 (2007). Mere conclusory statements are insufficient. *Id.*; MPEP § 2143.01(IV).

Certain drive restriction processes serve to decrease engine torque while simultaneously raising engine revolution speed in an effort to maintain a constant power output from the engine. One aim of certain embodiments of the present invention is to prevent an accumulator (such as a battery) from overcharging during such a drive restriction process. One example of an embodiment of the present invention will now be described with reference to claim 1.

Claim 1 recites a power output apparatus including a control module. One example of the function of this control module is shown in Figure A below. During normal engine operating mode (*i.e.* when there is no drive restriction), the control module controls various components of a vehicle (*e.g.*, an engine and a motor) to ensure output of a target power. During a drive restriction (as determined by a drive restriction effectuation module in step S130 in Figure A), the control module executes restriction control to ensure output of a corrected target power.

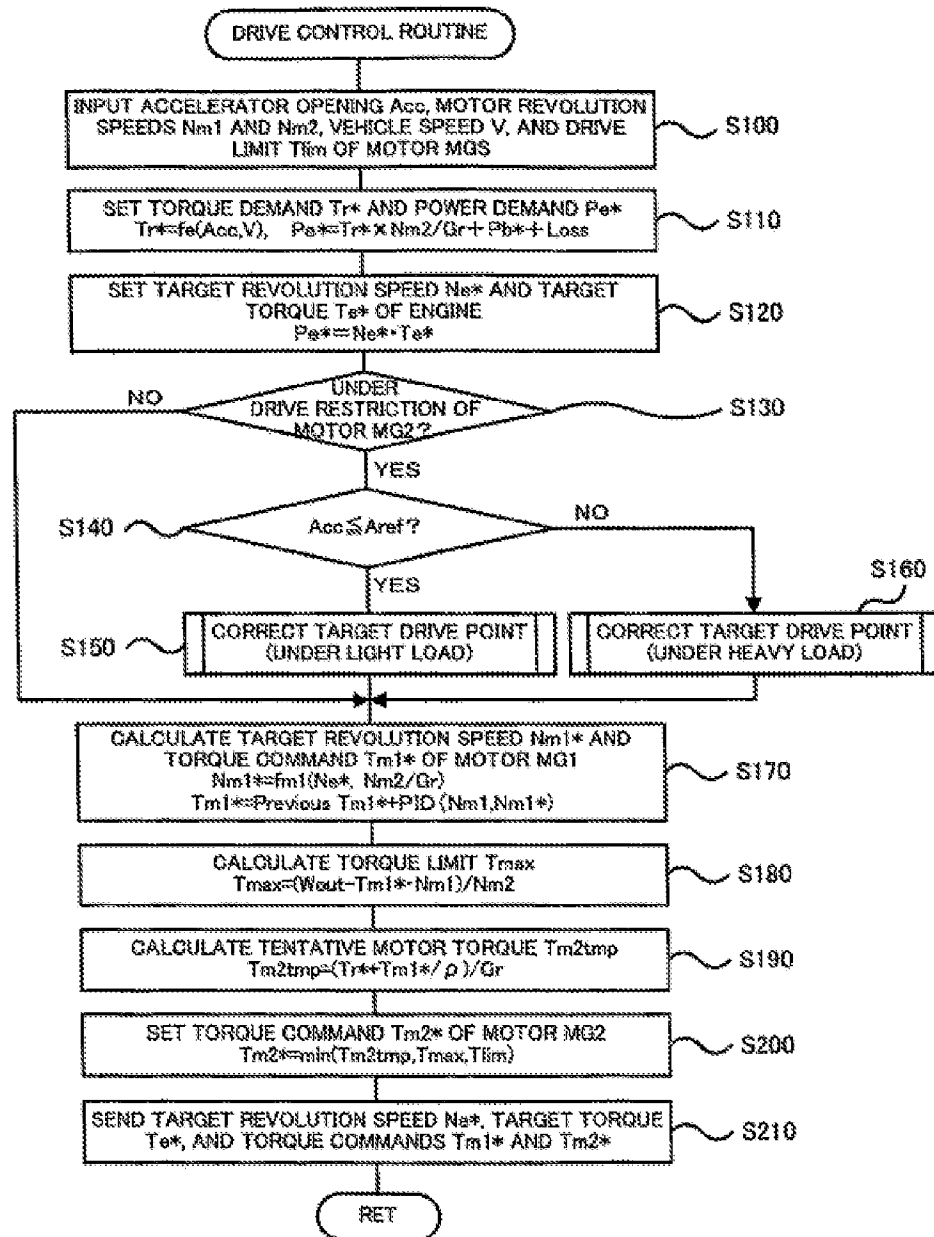


Figure A: FIG. 2 of the Published Application

In a particular example of a power output apparatus in accordance with claim 1, the control module further determines whether the engine is operating in a light load state or a heavy load state, as shown in step S140 for example. In one case, the determination of whether the engine is operating in a light or heavy load state is made based on whether an accelerator pedal

opening (Acc) is greater than a reference value (Aref, which may be 30% open, for example). When the engine is in a light load state ($Acc \leq Aref$), the control module executes control so as to change a charge-discharge electric power of the accumulator (*e.g.*, a battery) without varying the torque of the engine. When the engine is in a heavy load state ($Acc > Aref$), the control module executes control so as to change the charge-discharge electric power of the accumulator by varying the torque. In a more specific example, in the heavy load restriction control state, the control module allows the engine torque to vary but maintains a constant power demand. (*See* paragraphs [0046] – [0050] of the published application.)

Abe, on the other hand, discloses a power output unit for setting a power requirement for a motor, as shown in Figure B below. This reference describes controlling the operating point of an engine based on the rotational speed of a motor, as shown in step S140 of Figure B. This reference fails to describe the use of temperature of a motor or an inverter as a control variable. However, the Office action alleges that Kuang and Gabriel teach these features.

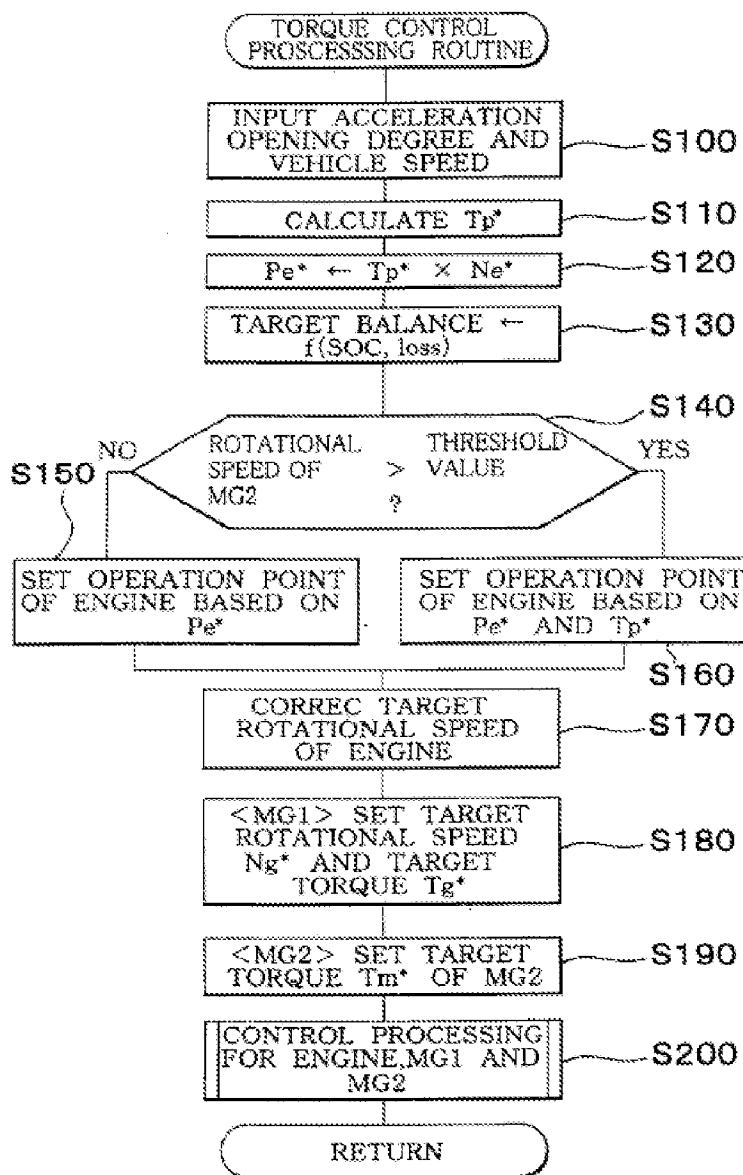


Figure B: FIG. 6 of Abe

The apparatuses and methods of claims 1, 5, and 15 of the present application are distinct from the combined Abe/Kuang/Gabriel device (“the AKG device”). While an apparatus and method in accordance with claims 1, 5, and 15 of the present application varies engine control based, in part, on operation in a light or heavy load state, the AKG device, at best, merely teaches altering engine operating points based on the rotational speed of a motor. The AKG device fails to account for differences in control when operating in a heavy load state versus a

light load state. Instead, the AKG device at best teaches varying engine operating points solely based on a rotational speed of a motor, as shown in Figure B above.

It is also respectfully submitted that Kuang and Gabriel fail to make up for the deficiencies of Abe. These references, at best, do not discuss varying engine operating points based on whether the engine is operating at a predetermined heavy load state or a predetermined light load state.

For at least these reasons, the cited references fail to render claims 1, 5, and 15 of the present application obvious. Specifically, none of Abe, Kuang, and Gabriel, nor the three in combination, teach a power output apparatus wherein engine torque is held constant during restriction control in a light load state but wherein a power demand of an engine is held constant during restriction control in a heavy load state, as recited by amended claims 1, 5, and 15.

Accordingly, it is respectfully submitted that claims 1, 5, 15, and all claims depending therefrom, are patentable over the cited references.

III. Conclusion

In light of the above discussion, the Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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